DRAFT ASSESSMENT OF BENEFITS, COSTS AND IMPACTS
UNIVERSE OF ALTERNATIVES
2020 Peninsula Gateway Corridor Study

HIGHWAY 101

ID Code	Alternative	Location	Traffic Benefits		Construction Cost (2006$)	Potential Impacts			
						Visual/ Aesthetics	Noise	Environment	Right-of-Way
			Change in Roadway Congestion (Expressed in ranges of travel time savings (min))	Decrease commute traffic on residential streets? (Expressed in ranges of peak period traffic volume)					
A (Alt 1)	Route 101 Auxiliary Lanes and San Antonio I/C	MV, PA	●	–	$$$	⊙	⊙	⊙	⊙
B	Reconstruct Embarcadero/Oregon Interchange	MV, PA	⊙	⊙	$$$	⊙	⊙	⊙	⊙
C	Reconstruct San Antonio interchange and eliminate southbound on ramp at Charleston	MV, PA	●	–	$$$	⊙	⊙	⊙	⊙
D1	Widen freeway to 10 lanes (County Line to Shoreline)	MV, PA	●	–	$$$$$	⊙	⊙	⊙	⊙
D2	Widen freeway to 10 lanes + Aux Lanes (County Line to Shoreline)	MV, PA	●	–	$$$$$	○	⊙	○	○
E	Widen freeway to 10 lanes + Aux Lanes (Whipple to County Line)	RC, MP, EPA, PA	●	–	$$$$$	○	⊙	○	○
F (Alt 2)	Route 101 Elevated Express Lanes	MV, PA, EPA, MP, RC	●	–	$$$$$	○	⊙	○	⊙
G	Improve local access across 101	MV, PA, EPA, MP, RC	–	–	$$	–	–	⊙	⊙
	ASSESSMENT KEY:								
		●	IMPROVEMENT			LESS-THAN-SIGNIFICANT			
		⊙	SMALL IMPROVEMENT			LESS-THAN-SIGNIFICANT (w/ MITIGATION)			
		○	DEGRADE			SIGNIFICANT			
		–	NO CHANGE			NONE			

Location Key:	
EPA	East Palo Alto
MP	Menlo Park
MV	Mountain View
PA	Palo Alto
RC	Redwood City

Construction Cost Key	
$$$$$	>$500M
$$$$	$200M-$500M
$$$	$50M-$200M
$$	$1M-$50M
$	<$1M

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CONNECTING BRIDGE AND HIGHWAY 101

ID Code	Alternative	Location	Traffic Benefits		Construction Cost (2006$)	Potential Impacts			
						Visual/ Aesthetics	Noise	Environment	Right-of-Way
			Change in Roadway Congestion (Expressed in ranges of travel time savings (min))	Decrease commute traffic on residential streets? (Expressed in ranges of peak period traffic volume)					
H (Alt 3)	Grade Separations on Bayfront Expressway	EPA, MP	●	–	$$$$	○	⊙	⊙	⊙
I	Extend Bayfront Expressway to Woodside Road	MP, RC	●	⊙	$$$	⊙	⊙	⊙	⊙
J	Construct direct flyover connection between Bayfront/ Marsh and 101 north of Marsh	MP, RC	⊙	⊙	$$$	○	⊙	⊙	⊙
K	Elevated Direct Connections between Bayfront and 101 along Willow Road Corridor * See improvement CC	EPA, MP	●	⊙	$$$$	○	⊙	⊙	⊙
L	Elevated roadway along Dumbarton RR corridor between University and 101	EPA, MP	●	⊙	$$$$	○	⊙	○	⊙
M	New 101 South connection through East Palo Alto (Expressway south of University)	EPA, MP	●	●	$$$$$	○	○	○	○
N	New 101 South connection skirting East Palo Alto (Expressway/viaduct along edge of bay)	EPA, PA	●	●	$$$$$	○	⊙	○	○
O	Tunnel beneath East Palo Alto	EPA	●	●	$$$$$	●	●	●	⊙
P	San Francisquito Creek Diversion Structure and Roadway (dual use tunnel facility)	EPA, PA	⊙	⊙	$$$$	⊙	⊙	○	⊙
P1	Route 101 flood control project potentially down Willow Road.	EPA, MP	–	–	$$$$	⊙	⊙	○	⊙
	ASSESSMENT KEY:								
		●	IMPROVEMENT		LESS-THAN-SIGNIFICANT				
		⊙	SMALL IMPROVEMENT		LESS-THAN-SIGNIFICANT (w/ MITIGATION)				
		○	DEGRADE		SIGNIFICANT				
		–	NO CHANGE		NONE				

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WILLOW ROAD

ID Code	Alternative	Location	Traffic Benefits		Construction Cost (2006$)	Potential Impacts			
						Visual/ Aesthetics	Noise	Environment	Right-of-Way
			Change in Roadway Congestion (Expressed in ranges of travel time savings (min))	Decrease commute traffic on residential streets? (Expressed in ranges of peak period traffic volume)					
Q (Alt 4)	Short-term operational improvements on Willow Road	EPA, MP	⊙	⊙	$	–	–	–	–
R	Prohibit left turns during peak travel periods	EPA, MP	⊙	⊙	$	–	–	⊙	–
S	Prohibit local cross traffic during peak travel periods	EPA, MP	⊙	⊙	$	–	–	○	–
T	Exit/Entrance Right Turn pockets on Willow	EPA, MP	⊙	⊙	$	–	–	–	⊙
U	Set back curb line one lane width from traveled way at driveways	EPA, MP	⊙	⊙	$	–	–	○	○
V	Eliminate driveway access on Willow	EPA, MP	⊙	⊙	$	–	–	○	–
W	Eliminate selected signalized intersections: · Newbridge St · Ivy Dr · Hamilton Ave	EPA, MP	⊙	⊙	$	–	–	○	–
X	Eliminate signalized intersections and allow right turns only on/off Willow	EPA, MP	⊙	⊙	$	–	–	○	–
Y	Eliminate signalized intersections and prohibit any access from local streets	EPA, MP	⊙	⊙	$	–	–	○	–
Z	Widen Willow one lane each direction	EPA, MP	●	●	$$$	○	⊙	○	○
AA	Grade separations at selected intersections: · Newbridge St · Ivy Dr · Hamilton Ave	EPA, MP	●	●	$$$$	○	⊙	○	○
BB	Pedestrian over crossing at Ivy Dr (near Mid-Peninsula High School)	EPA, MP	–	–	$$	○	–	–	○
CC1	Elevated viaduct expressway structure • 2 lanes in each direction	EPA, MP	●	⊙	$$$$	○	⊙	⊙	⊙
CC2 (Alt 6)	Elevated viaduct expressway structure • 1 lane in each direction	EPA, MP	●	⊙	$$$$	○	⊙	⊙	⊙
CC3	Elevated viaduct expressway structure • Reversible 2 lanes	EPA, MP	●	⊙	$$$$	○	⊙	⊙	⊙
CC4	Elevated viaduct expressway structure • 3 lanes with reversible middle lane	EPA, MP	●	⊙	$$$$	○	⊙	⊙	⊙
DD1	Depressed expressway • 2 lanes in each direction	EPA, MP	●	●	$$$$	⊙	⊙	⊙	⊙
DD2	Depressed expressway • 1 lane in each direction	EPA, MP	●	⊙	$$$$	⊙	⊙	⊙	⊙
DD3	Depressed expressway • Reversible 2 lanes	EPA, MP	●	●	$$$$	⊙	⊙	⊙	⊙
DD4	Depressed expressway • 3 lanes with reversible middle lane	EPA, MP	●	●	$$$$	⊙	⊙	⊙	⊙
EE	Grade separations at all intersections (over crossings or under crossings)	EPA, MP	●	●	$$$$$	○	⊙	○	○
FF	Tunnel Expressway (maintaining existing facility at grade)	EPA, MP	●	●	$$$$	⊙	⊙	⊙	⊙
GG (Alt 7)	Willow Road Depressed/Cantilevered Express Lanes	EPA, MP	●	⊙	$$$$	⊙	⊙	⊙	⊙
	ASSESSMENT KEY:								
		●	IMPROVEMENT			LESS-THAN-SIGNIFICANT			
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		○	DEGRADE			SIGNIFICANT			
		–	NO CHANGE			NONE			

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$$$	$50M-$200M
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UNIVERSITY AVENUE

ID Code	Alternative	Location	Traffic Benefits		Construction Cost (2006$)	Potential Impacts			
						Visual/ Aesthetics	Noise	Environment	Right-of-Way
			Change in Roadway Congestion (Expressed in ranges of travel time savings (min))	Decrease commute traffic on residential streets? (Expressed in ranges of peak period traffic volume)					
HH (Alt 8)	Short-term operational improvements on University Avenue	EPA	⊙	⊙	$	-	-	-	-
II	Prohibit left turns during peak travel periods	EPA	⊙	⊙	$	-	-	⊙	-
JJ	Prohibit local cross traffic during peak travel periods	EPA	⊙	⊙	$	-	-	○	-
KK	Entrance/Exit Right Turn pockets on University	EPA	⊙	⊙	$	-	-	-	⊙
LL	Set back curb line one lane width from traveled way at driveways	EPA	⊙	⊙	$	-	-	○	○
MM	Eliminate driveway access on University	EPA	⊙	⊙	$	-	-	○	-
NN	Eliminate selected signalized intersections: · Bell · Runnymeade · Kavanaugh	EPA	⊙	⊙	$	-	-	○	-
OO	Eliminate signalized intersections and allow right turns only on/off University	EPA	⊙	⊙	$	-	-	○	-
PP	Eliminate signalized intersections and prohibit any access from local streets	EPA	⊙	⊙	$	-	-	○	-
	ASSESSMENT KEY:								
		●	IMPROVEMENT			LESS-THAN-SIGNIFICANT			
		⊙	SMALL IMPROVEMENT			LESS-THAN-SIGNIFICANT (w/ MITIGATION)			
		○	DEGRADE			SIGNIFICANT			
		-	NO CHANGE			NONE			

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UNIVERSITY AVENUE (CONT'D)

ID Code	Alternative	Location	Traffic Benefits		Construction Cost (2006$)	Potential Impacts			
						Visual/ Aesthetics	Noise	Environment	Right-of-Way
			Change in Roadway Congestion (Expressed in ranges of travel time savings (min))	Decrease commute traffic on residential streets? (Expressed in ranges of peak period traffic volume)					
QQ	Widen University one lane each direction	EPA	●	●	$$$	○	⊙	○	○
RR	Grade separations at selected intersections: · Donohoe · Bay	EPA	●	●	$$$$	○	⊙	○	○
SS1	Elevated expressway/viaduct along University corridor · 2 lanes each direction	EPA	●	●	$$$$	○	⊙	⊙	⊙
SS2	Elevated viaduct expressway structure · 1 lane in each direction	EPA	●	●	$$$$	○	⊙	⊙	⊙
SS3	Elevated viaduct expressway structure · Reversible 2 lanes	EPA	●	●	$$$$	○	⊙	⊙	⊙
SS4	Elevated viaduct expressway structure · 3 lanes with reversible middle lane	EPA	●	●	$$$$	○	⊙	⊙	⊙
TT!	Depressed expressway · 2 lanes each direction	EPA	●	●	$$$$$	⊙	⊙	⊙	⊙
TT2	Depressed expressway · 1 lane in each direction	EPA	●	●	$$$$$	⊙	⊙	⊙	⊙
TT3	Depressed expressway · Reversible 2 lanes	EPA	●	●	$$$$$	⊙	⊙	⊙	⊙
TT4	Depressed expressway · 3 lanes with reversible middle lane	EPA	●	●	$$$$$	⊙	⊙	⊙	⊙
UU	Grade separations at all intersections (over crossings or under crossings)	EPA	●	●	$$$$$	○	⊙	○	○
VV	Tunnel Expressway, (maintain existing facility at grade)	EPA	●	●	$$$$$	●	●	●	⊙
WW (Alt 9)	University Avenue Depressed/Cantilevered Express Lanes	EPA	●	●	$$$$$	⊙	⊙	⊙	⊙
	ASSESSMENT KEY:								
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		-	NO CHANGE			NONE			

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INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

ID Code	Alternative	Location	Traffic Benefits		Construction Cost (2006$)	Potential Impacts			
						Visual/ Aesthetics	Noise	Environment	Right-of-Way
			Change in Roadway Congestion (Expressed in ranges of travel time savings (min))	Decrease commute traffic on residential streets? (Expressed in ranges of peak period traffic volume)					
XX	Install traffic signal interconnect/ communications infrastructure between Middlefield Road and 101	ALL	⊙	⊙	$$	-	-	-	-
YY	Install transit signal priority to support high-patronage bus routes.	ALL	⊙	⊙	$$	-	-	-	-
ZZ	Install trailblazers and/or arterial CMS to provide route guidance information	ALL	⊙	⊙	$$	-	-	-	-
AAA	Prepare Incident Management and Traveler Information Plan for Corridor	ALL	⊙	⊙	$	-	-	-	-
	ASSESSMENT KEY:								
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		-	NO CHANGE			NONE			

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OTHER

ID Code	Alternative	Location	Traffic Benefits		Construction Cost (2006$)	Potential Impacts			
						Visual/ Aesthetics	Noise	Environment	Right-of-Way
			Change in Roadway Congestion (Expressed in ranges of travel time savings (min))	Decrease commute traffic on residential streets? (Expressed in ranges of peak period traffic volume)					
BBB	Study the possible designation of East Bayshore (San Antonio to University) as a reliever route to provide congestion relief and for incident management on Route 101 · Improve operations at intersections · Install directional signage to help keep commuters off residential streets	MV, EPA	-	-	$	-	-	-	-
CCC	Improve 101/University interchange · Construct southbound direct-connect off-ramp · Improve on-off connections for northbound traffic	PA	⊙	⊙	$$$	⊙	⊙	⊙	⊙
DDD	Define residential traffic management elements that complement high priority capital improvements	ALL	-	●	$	-	-	●	-
EEE	Extend Central Expressway to Sand Hill Road	PA	●	●	$$$$$	○	○	○	○
	ASSESSMENT KEY:								
		●	IMPROVEMENT			LESS-THAN-SIGNIFICANT			
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		-	NO CHANGE			NONE			

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